Lead and Lead Compounds:

The New Lead Rule

TOPICS

- Sources of lead and lead compounds
- Overview of the reporting changes
- Alloy qualifications
- Exemptions
- Threshold determinations (example calculations)
- Release and other waste management reporting (example calculations)
- TRI homepage http://www.epa.gov/tri

LEAD AND LEAD COMPOUNDS

- Elemental lead is rarely found in nature; it most commonly occurs as the mineral galena (lead sulfide [PbS])
- Typically combined with other materials for use as an alloy or a lead compound
- Types of lead compounds include:
  - Organolead compounds
  - Lead oxides
  - Lead sulfides
  - Lead salts
- Lead is obtained from mining and recycling

LEAD IN RAW MATERIALS

- Raw materials processed by a variety of facilities may contain metallic lead or lead compounds:
  - Metal ores
  - Coal
  - Wood
  - Oil
  - Oil products
    - » heating oils
    - » gasolines
- Use (including combustion) of materials containing lead or lead compounds could trigger TRI reporting.

Typical Concentration of Lead in Raw Materials and Quantity Required to Meet 100 lb. Threshold*

Raw Material	Lead Concentration (ppmw)	Quantity Needed to Meet the 100 lb Lead Threshold
Bituminous coal	3 to 111	3.33×10^7 to 9.01×10^5 lbs
Subbituminous coal	2.07 to 31	4.83×10^7 to 3.23×10^6 lbs
Lignite coal	3.73 to 9.8	2.68×10^7 to 1.02×10^7 lbs
Wood	20	5.00×10^6 lbs

**Emergency Planning and Community Right-to-Know Act - Section 313: Guidance for Reporting Releases and Other Waste Management Activities of Toxic Chemicals: Lead and Lead Compounds*

COMBUSTION OF FUELS CONTAINING LEAD

- Metal compounds and elemental metals in fuel are typically converted to metal oxides during combustion
  - This is considered to be manufacturing
- If no other data are available, assume the compound formed is the lowest molecular weight metal oxide
- Example:
  - Lead in fuel ☹ Assume PbO is manufactured (not PbO_2, Pb_3O_4, etc.)

LEAD RULE REPORTING THRESHOLD

- Reporting threshold lowered to 100 pounds for manufacturing, processing, or otherwise use of lead (except in stainless steel, brass and bronze alloys) or lead compounds.
- Effective for TRI reporting year 2001 (covering activities from January 1 through December 31, 2001), for reports to be filed on or before July 1, 2002.

LEAD/LEAD COMPOUND THRESHOLDS

- There is one TRI listing for *lead,* but three reporting thresholds may apply:
  - For all lead (including lead in stainless steel, brass, and bronze alloys):
    - » 25,000 lbs for manufacturing and processing
    - » 10,000 lbs for otherwise use
  - For lead not in stainless steel, brass, and bronze alloys:
    - » 100 lbs for manufacturing, processing, and otherwise use
- For *lead compounds*, there is only one threshold that applies:
  - » 100 lbs for manufacturing, processing, and otherwise use

OTHER APPLICABLE PBT RULE CHANGES

- PBT changes for lead (except in stainless steel, brass and bronze alloys) and lead compounds
  - Eliminated the *de minimis* exemption for lead and lead compounds
  - Eliminated the use of the alternate threshold of 1,000,000 pounds and thus the Form A certification statement
  - Eliminated the use of range reporting in Sections 5 and 6 of Part II the Form R
  - Adds additional data reporting precision (e.g., to one-tenth of a pound where applicable)

DATA PRECISION

Scenario	What is the Smallest Quantity That TRI Reporting Requires?
Lead contained in mixtures (other than the selected alloys) exceeds 100 pounds	0.1 pounds
Lead compounds exceed 100 pounds	0.1 pounds
Lead contained *only* in stainless steel, brass, or bronze	1 pound

"Facilities should report . . . at a level of precision supported by the accuracy of the underlying data and the estimation techniques on which the estimate is based."

ALLOY QUALIFICATION

- What is an alloy?

  A solid mixture containing two or more elements, at least one of which is a metal.

- Why the alloy qualification?

  EPA deferred making a final decision on the lower reporting threshold until a scientific review of the alloy issues is complete.

ALLOY QUALIFICATION

- If you process or otherwise use lead only in stainless steel, brass, and bronze alloys, the lead rule has not changed your reporting requirements.
  - Remember, if some elemental lead is removed from the qualified alloy, such as vaporization during melting of an alloy, the 100 pound threshold applies to the amount of lead removed (e.g., processed) from the alloy.
- You may still report as you did before when you exceed the 25,000 pound threshold for manufacturing and processing or the 10,000 pound threshold for otherwise use.
- The *de minimis* exemption can still be taken; you may still be eligible for the alternate threshold of 1,000,000 pounds and use of the Form A certification statement if applicable, and range reporting can be used in Sections 5 and 6 of Part II of the Form R.

Examples in which lead-containing materials may be exempt* from threshold determinations and release calculations.

The Use of :	Exemption
Bricks used to construct a building	Activity Use – Structural
Lead-acid batteries	Article
Solder used to fix a part on a forklift	Activity Use –Motor Vehicle
A lead-containing mixture used as a reactant in a routine lab analysis	Laboratory Activities
Plant/process intake air or water	Activity Use - Process water and intake air
Charcoal for barbecues	Activity Use - Personal use

*These exemptions do not apply when manufacturing

THRESHOLD DETERMINATION SLIDE FORMAT

- Subsequent threshold determination examples apply specifically to:
  - Lead and lead compounds ➧ lead/lead compound examples (2)
  - Lead in alloys ➧ alloy examples (2)
- Each example spans several slides:
  - Each example group has an introduction and conclusion to illustrate key points
  - Each example answers the following questions:
    - » What amount of *lead* or *lead compounds* has been manufactured, processed, or otherwise used?
    - » Has a threshold been exceeded?

THRESHOLD DETERMINATIONS

- Step 1: Identify all activities where the chemical is used at your facility
  - Manufacturing
  - Processing
  - Otherwise use
- Step 2: Obtain or estimate chemical composition data for raw materials and manufactured products
- Step 3: Calculate the amounts of the chemical manufactured, processed, and otherwise used
- Step 4: Compare the calculated amounts used to the respective threshold(s) to determine whether any thresholds have been exceeded, I.e, whether an EPCRA Section 313 Report is required

LEAD/LEAD COMPOUND EXAMPLES

- Lead/lead compound examples #1 & #2:
  - Facilities that manufacture, process, or otherwise use both lead and lead compounds
- Goals:
  - Apply the four basic steps for performing threshold determinations for *lead compounds*
  - Determine whether an EPCRA Section 313 Report is required for each scenario

LEAD/LEAD COMPOUNDS EX. #1

- Consider a facility that otherwise uses lead and manufactures lead compounds during combustion:
  - 13,600,000 pounds of coal is used to fire boilers. The coal contains lead at 7.00 ppmw.
- Questions:

1) What amount of *lead* was otherwise used?

2) Has a threshold for otherwise using *lead* been exceeded?

3) What amount of *lead compounds* was coincidentally manufactured?

4) Has the threshold for manufacturing *lead compounds* been exceeded?

LEAD/LEAD COMPOUNDS EX. #1

- Consider a facility that otherwise uses lead and manufactures lead compounds during combustion:
  - 13,600,000 pounds of coal is used to fire boilers. The coal contains lead at 7.00 ppmw.
- Question 1: What amount of *lead* was otherwise used?

LEAD/LEAD COMPOUNDS EX. #1

- Consider a facility that otherwise uses lead and manufactures lead compounds during combustion:
  - 13,600,000 pounds of coal is used to fire boilers. The coal contains lead at 7.00 ppmw.
- Question 1: What amount of *lead* was otherwise used?

Lead in coal:
(13,600,000 pounds) (0.000700%) = 95.2 pounds

LEAD/LEAD COMPOUNDS EX. #1

- Consider a facility that otherwise uses lead and manufactures lead compounds during combustion:
  - 13,600,000 pounds of coal is used to fire boilers. The coal contains lead at 7.00 ppmw.
- Question 2: Has a threshold for otherwise using *lead* been exceeded?

Lead in coal:
(13,600,000 pounds) (0.000700%) = 95.2 pounds
No. 95.2 pounds is less than the 100 pound threshold for otherwise using lead.

LEAD/LEAD COMPOUNDS EX. #1

- Consider a facility that otherwise uses lead and manufactures lead compounds during combustion:
  - 13,600,000 pounds of coal is used to fire boilers. The coal contains lead at 7.00 ppmw. Assume for demonstration purposes in this example that it is elemental lead. However, in a real analysis, it would probably be a lead compound. Lacking better information, assume lowest-weight oxide – Pb0.
- Question 3: What amount of *lead compounds* was coincidentally manufactured?

LEAD/LEAD COMPOUNDS EX. #1

- Consider a facility that otherwise uses lead and manufactures lead compounds during combustion:
  - 13,600,000 pounds of coal is used to fire boilers. The coal contains lead at 7.00 ppmw.
- Question 3: What amount of *lead compounds* was coincidentally manufactured?

223 pounds PbO formed for every 207 pounds Pb used.
Total PbO formed = (95.2 pounds)(223/207) = 103 pounds

LEAD/LEAD COMPOUNDS EX. #1

- Consider a facility that otherwise uses lead and manufactures lead compounds during combustion:
  - 13,600,000 pounds of coal is used to fire boilers. The coal contains lead at 7.00 ppmw.
- Question 4: Has the threshold for manufacturing *lead compounds* been exceeded?

223 pounds PbO formed for every 207 pounds Pb used.
Total PbO formed = (95.2 pounds)(223/207) = 103 pounds
Yes. 103 pounds is more than the 100 pound threshold for manufacturing lead compounds.

POSSIBLE OUTCOMES

Outcome of Threshold Determination	What Type of Reporting Is Required?
Thresholds not exceeded for either lead or lead compounds	None
Threshold exceeded for lead, but not for lead compounds	Report for lead, but not for lead compounds *
Threshold exceeded for lead compounds, but not for lead	*Report for lead compounds, but not for lead **
Thresholds exceeded for both lead and lead compounds	Report for both lead and lead compounds, either on a single form (for lead compounds) or on two forms (one for lead and the other for lead compounds) *

•Releases and waste management quantities for lead and lead compounds are expressed as the parent metal, lead.

LEAD/LEAD COMPOUNDS EX. #2

- Consider a facility that processes the following two materials that include lead or lead compounds:
  - 10,000,000 pounds of wood are processed. The wood contains lead at 20 ppmw.
  - In spray booths, 20,000 pounds of paint containing "<2%" lead chromate is applied to furniture products.
- Questions:

1) What amount of *lead* was processed?

2) Has a threshold for processing *lead* been exceeded?

3) What amount of *lead compounds* were processed?

4) Has the threshold for processing *lead compounds* been exceeded?

LEAD/LEAD COMPOUNDS EX. #2

- Consider a facility that processes the following two materials that include lead or lead compounds:
  - 10,000,000 pounds of wood are processed. The wood contains lead at 20 ppmw.
  - In spray booths, 20,000 pounds of paint containing "<2%" lead chromate is applied to furniture products.
- Question 1: What amount of *lead* was processed?

(10,000,000 pounds)(0.002%) = 200 pounds

LEAD/LEAD COMPOUNDS EX. #2

- Consider a facility that processes the following two materials that include lead or lead compounds:
  - 10,000,000 pounds of wood are processed. The wood contains lead at 20 ppmw.
  - In spray booths, 20,000 pounds of paint containing "<2%" lead chromate is applied to furniture products.
- Question 2: Has a threshold for processing *lead* been exceeded?

(10,000,000 pounds)(0.002%) = 200 pounds
Yes. 200 pounds is more than the 100 pound threshold for processing lead.

LEAD/LEAD COMPOUNDS EX. #2

- Consider a facility that processes the following two materials that include lead or lead compounds:
  - 10,000,000 pounds of wood are processed. The wood contains lead at 20 ppmw.
  - In spray booths, 20,000 pounds of paint containing "<2%" lead chromate is applied to furniture products.
- Question 3: What amount of *lead compounds* was processed?

LEAD/LEAD COMPOUNDS EX. #2

- Consider a facility that processes the following two materials that include lead or lead compounds:
  - 10,000,000 pounds of wood are processed. The wood contains lead at 20 ppmw.
  - In spray booths, 20,000 pounds of paint containing "<2%" lead chromate is applied to furniture products.
- Question 3: What amount of *lead compounds* was processed?

(20,000 pounds)(2%) = 400 pounds

LEAD/LEAD COMPOUNDS EX. #2

- Consider a facility that processes the following two materials that include lead or lead compounds:
  - 10,000,000 pounds of wood are processed. The wood contains lead at 20 ppmw.
  - In spray booths, 20,000 pounds of paint containing "<2%" lead chromate is applied to furniture products.
- Question 4: Has the threshold for processing *lead compounds* been exceeded?

(20,000 pounds)(2%) = 400 pounds
Yes. 400 pounds is more than the 100 pound threshold for processing lead compounds.

POSSIBLE OUTCOMES

Outcome of Threshold Determination	What Type of Reporting Is Required?
Thresholds not exceeded for either lead or lead compounds	None
Threshold exceeded for lead, but not for lead compounds	Report for lead, but not for lead compounds *
Threshold exceeded for lead compounds, but not for lead	Report for lead compounds, but not for lead *
Thresholds exceeded for both lead and lead compounds	*Report for both lead and lead compounds, either on a single form (for lead compounds) or on two forms (one for lead and the other for lead compounds) *

•Releases and waste management quantities for lead and lead compounds are expressed as the parent metal, lead.

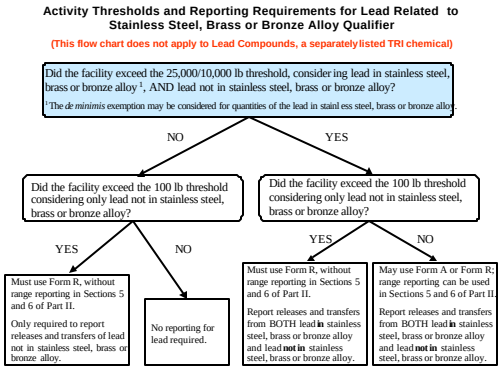
LEAD/LEAD COMP. EX. KEY POINTS

- As appropriate, calculate two thresholds: one for lead and one for lead compounds.
- Consider all known forms of lead compounds in your threshold determinations.
- Sometimes release calculations must be done to determine thresholds.
- Do not add the lead within lead compounds to your threshold for lead.
- Do not add usage of elemental lead to your threshold for lead compounds.
- Base your threshold for lead compounds on the total weight of the compounds, not the lead within the compounds.

LEAD ALLOY EXAMPLES

- Lead alloy examples #1& #2:
  - Facilities that process lead, in varying amounts, both in and not in stainless steel, brass, and bronze alloys
- Goals:
  - Follow the four basic steps for performing threshold determinations for *lead* both in and not in stainless steel, brass, and bronze alloys
  - Determine whether an EPCRA Section 313 Report is required for each scenario

LEAD THRESHOLD DETERMINATION FLOW CHART



ALLOY EXAMPLE #1

- Consider a facility that processes the following two alloys that include:
  - 20,000 pounds of lead in a stainless steel alloy.
  - 275 pounds of lead in another alloy that is not stainless steel, brass, or bronze.
- Questions:
  1) What amount of *lead* was processed?
  2) Has a threshold for processing (either 25,000 or 100 pounds) *lead* been exceeded?

ALLOY EXAMPLE #1

- Consider a facility that processes the following two alloys that include:
  - 20,000 pounds of lead in a stainless steel alloy.
  - 275 pounds of lead in another alloy that is not stainless steel, brass, or bronze.
- Question 1: What amount of *lead* was processed?

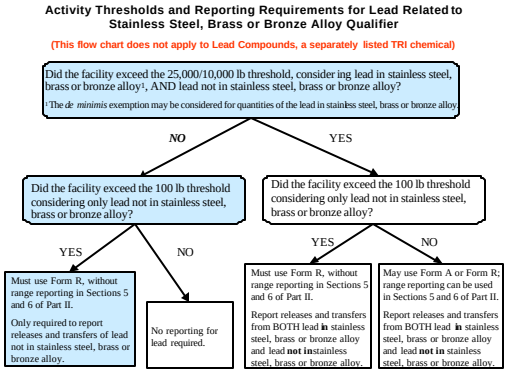
Total processed = 20,000 + 275 = 20,275 pounds

ALLOY EXAMPLE #1

- Consider a facility that processes the following two alloys that include:
  - 20,000 pounds of lead in a stainless steel alloy.
  - 275 pounds of lead in another alloy that is not stainless steel, brass, or bronze.
- Question 2: Has a threshold for processing (either 25,000 or 100 pounds) *lead* been exceeded?

Total processed = 20,000 + 275 = 20,275 pounds
Yes. Although the 25,000 pound threshold was not exceeded, the 100 pound threshold was exceeded.

LEAD THRESHOLD DETERMINATION FLOW CHART



ALLOY EXAMPLE #2

- Consider a facility that processes the following two alloys that include:
  - 24,950 pounds of lead in a stainless steel alloy.
  - 75 pounds of lead in another alloy that is not stainless steel, brass, or bronze.
- Questions:
  1) What amount of *lead* was processed?
  2) Has a threshold for processing (either 25,000 or 100 pounds) *lead* been exceeded?

ALLOY EXAMPLE #2

- Consider a facility that processes the following two alloys that include:
  - 24,950 pounds of lead in a stainless steel alloy.
  - 75 pounds of lead in another alloy that is not stainless steel, brass, or bronze.
- Question 1: What amount of *lead* was processed?

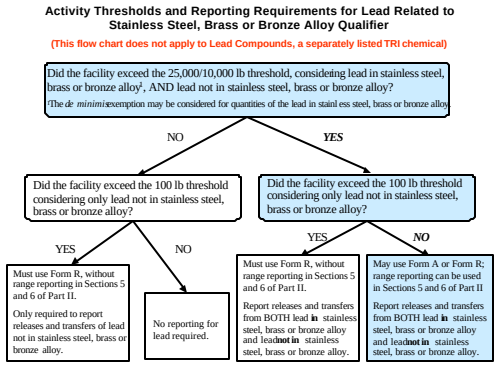
Total processed = 24,950 + 75 = 25,025 pounds

ALLOY EXAMPLE #2

- Consider a facility that processes the following two alloys that include:
  - 24,950 pounds of lead in a stainless steel alloy.
  - 75 pounds of lead in another alloy that is not stainless steel, brass, or bronze.
- Question 2: Has a threshold (either 25,000 or 100 pounds) for processing *lead* been exceeded?

Total processed = 24,950 + 75 = 25,025 pounds
Yes. 25,025 pounds is more than the 25,000 pound threshold for processing lead.
The 100 pound threshold was not exceeded.

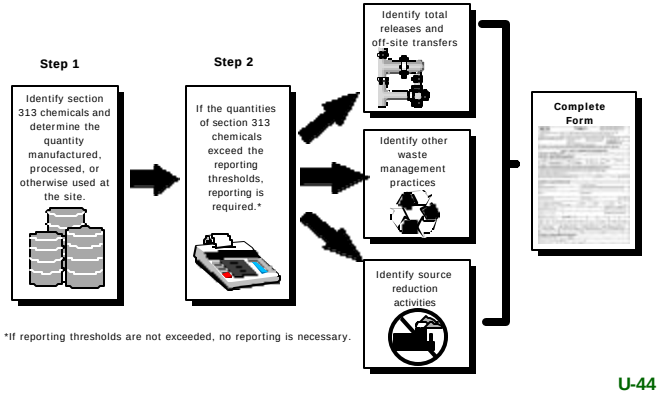
LEAD THRESHOLD DETERMINATION FLOW CHART



ALLOY EXAMPLE KEY POINTS

- Lead in stainless steel, brass, and bronze alloys is not exempt from TRI reporting: the 25,000 and 10,000 pound thresholds still apply.
- Count together all lead used at the facility (regardless of whether it is found in stainless steel, brass, and bronze alloys) when evaluating the 25,000 and 10,000 pound thresholds.
- Stainless steel, brass, and bronze alloys contain lead, not lead compounds.

TRI REPORTING PROCESS



*If reporting thresholds are not exceeded, no reporting is necessary.

EXAMPLE RELEASE CALCULATIONS

- Example calculations #1 and #2:
  - Facilities that manufacture, process, or otherwise use lead and lead compounds, but not in stainless steel, brass, or bronze alloys
- Goals:
  - Review approaches for estimating releases and characterizing waste management activities
  - Address some specific issues pertaining to the new lead rule

EXAMPLE RELEASE CALCULATIONS

- Step 1: Identify all waste streams and waste management activities for the chemical
  - On-site: air (fugitive and stack), surface water, underground injection, land, and waste management activities
  - Off-site: POTW and transfers for treatment, disposal, recycling, and energy recovery
- Step 2: Determine the most appropriate approach for estimating releases and amounts managed as waste
- Step 3: Calculate releases and amounts managed as waste

EXAMPLE RELEASE CALCULATION #1

- Consider a facility that otherwise uses lead only in the following activity:
  - 13,600,000 pounds of coal are used to fire boilers. The coal contains lead at 7.00 ppmw.
- Questions: What amount of *lead compounds* were manufactured? Was the reporting threshold exceeded?

(13,600,000 pounds of coal)(0.000700% Pb) = 95.2 pounds Pb

223 pounds PbO formed for every 207 pounds Pb used.
Total PbO formed = (95.2 pounds)(223/207) = 103 pounds
Lead compounds threshold *was* exceeded.

EXAMPLE RELEASE CALCULATION #1

- Step 1: Identify release streams and waste management activities
  - Assume that the only release generated by the boiler is air emissions and the facility determined that 0.25 pounds of lead were present in the boiler ash
- Step 2: Determine approaches for estimating releases
- Step 3: Calculate releases and amounts managed as waste

EXAMPLE RELEASE CALCULATION #1

- Options for estimating air releases from the coal-fired boiler (assume it is uncontrolled):
  - Mass balance—all lead that was in the coal is emitted through the stack
  - Emission factor—multiply the amount of coal burned by a factor that estimates lead emissions per ton of coal burned
- How do these approaches differ? Which approach should be used?

EXAMPLE RELEASE CALCULATION #1

- Mass balance calculation:

Lead in coal: (13,600,000 pounds) (0.000700%) = 95.2 pounds
Assume all lead in the coal (less that in ash, 0.25 lbs) is emitted through the stack: 94.95 pounds of lead emissions

- Emission factor calculation:

Total coal burned = 13,600,000 pounds = 6,800 tons
Emission factor = 0.0133 pounds lead emitted per ton burned
90.4 pounds of lead emissions

- Use your judgment to select most appropriate approach based on the best available information

Report releases and waste management activities of *lead only*, even if reporting for lead compounds

EXAMPLE RELEASE CALCULATION #2

- Consider a facility that processes the following two materials that include lead or lead compounds:
  - 10,000,000 pounds of wood are processed. The wood contains lead at 20 ppmw.
  - In spray booths, 20,000 pounds of paint containing "<2%" lead chromate is applied to furniture products.
- Thresholds were exceeded for both lead and lead compounds.
- Assume facility will submit one Form R (for lead compounds).

EXAMPLE RELEASE CALCULATION #2

- For the wood processing, make the following assumptions:
  - All wood is processed in a closed system
  - The only waste generated is wood chips and dusts, all of which are collected and sent to an off-site wood-fired boiler
- For the spray painting, make the following assumptions:
  - All spraying is done with spray guns with a transfer efficiency of 80%
  - All spraying occurs in enclosed spray booths
  - All spray booth exhaust is captured and vented through particulate filters with 90% collection efficiency
  - Spent filters are disposed off-site

EXAMPLE RELEASE CALCULATION #2

- Calculation for processing of wood chips:
  - Shipping logs indicate that the facility sends (on average) 6,500 pounds of wood wastes to the wood-fired boiler per month
  - Concentration of lead in wood is 20 ppmw
- What is the total quantity of lead sent to the off-site wood-fired boiler?
- How would this amount be reported on the Form R?

EXAMPLE RELEASE CALCULATION #2

- What is the total quantity of lead sent to the off-site wood-fired boiler?

Total waste: (6,500 lbs/month)(12 months)=78,000 lbs
Lead in waste: (78,000 lbs)(0.0020%)=1.6 lbs

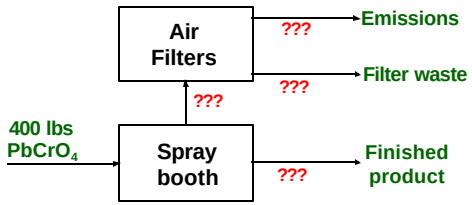
- How would this amount be reported on the Form R?
  - Elemental lead is not combusted and therefore cannot be claimed as energy recovery
  - In this case, lead in the waste wood chips and dusts must be classified as an off-site transfer for disposal

EXAMPLE RELEASE CALCULATION #2

- Identify all release streams and waste management activities
- What releases and waste management activities should be included for the spray painting?
- Remember the following assumptions:
  - All spraying is done with spray guns with a transfer efficiency of 80%
  - All spraying occurs in enclosed spray booths
  - Spray booth exhaust is vented through particulate filters with 90% collection efficiency
  - Spent filters are disposed off-site

EXAMPLE RELEASE CALCULATION #2

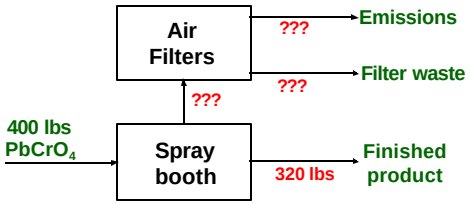
- Conceptual approach for characterizing uses in the spray booth:



- Based on the information provided, how much lead chromate do you think is at each point in the process?

EXAMPLE RELEASE CALCULATION #2

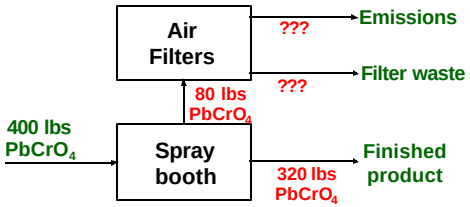
- Conceptual approach for characterizing uses in the spray booth:



Lead chromate in finished product:
(400 lbs $PbCrO_4$)(0.8)=320 lbs $PbCrO_4$

EXAMPLE RELEASE CALCULATION #2

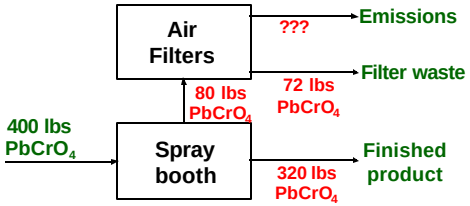
- Conceptual approach for characterizing uses in the spray booth:



Lead chromate that flows to the inlet of the air filters:
(400 lbs $PbCrO_4$)-(320 lbs $PbCrO_4$)=80 lbs $PbCrO_4$

EXAMPLE RELEASE CALCULATION #2

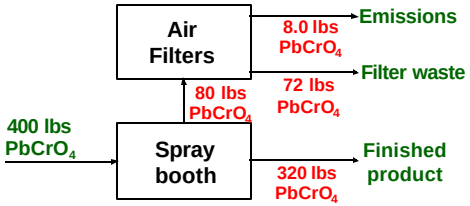
- Conceptual approach for characterizing uses in the spray booth:



Lead chromate collected by the air filters:
(80 lbs $PbCrO_4$ enter filters)(0.9)=72 lbs $PbCrO_4$

EXAMPLE RELEASE CALCULATION #2

- Conceptual approach for characterizing uses in the spray booth:



Lead chromate emitted to the air:
(80 lbs $PbCrO_4$ enter filters)-(72 lbs $PbCrO_4$ collected)=
8.0 lbs $PbCrO_4$ of stack emissions

EXAMPLE RELEASE CALCULATION #2

Question	Response for Quantities in Air Emissions
Where does the amount get reported on the Form R?	
How much should be reported?	
What was the basis for determining this amount (M,C,E,O)*?	

*Monitoring data, mass balance, emission factor, or other approaches and engineering estimates

EXAMPLE RELEASE CALCULATION #2

Question	Response for Quantities in Air Emissions
Where does the amount get reported on the Form R?	Section 5.2 (Part II) Section 8.1 (Part II)
How much should be reported?	5.1 pounds *of lead*
What was the basis for determining this amount (M,C,E,O)?	O (Engingeering calculations)

Lead chromate is 64.1% lead by weight.

EXAMPLE RELEASE CALCULATION #2

Question	Response for Quantities in Filter Waste
Where does the amount and activity get reported on the Form R?	
How much should be reported?	
What was the basis for determining this amount (M,C,E,O)*?	

*Monitoring data, mass balance, emission factor, or other approaches and engineering estimates

EXAMPLE RELEASE CALCULATION #2

Question	Response for Quantities in Filter Waste
Where does the amount and activity get reported on the Form R?	Section 6.2 (Part II) Section 7A (Part II) Section 8.1 (Part II)
How much should be reported?	46 pounds *of lead* (plus amount from wood chips sent to boiler)
What was the basis for determining this amount (M,C,E,O)?	O (Engingeering calculations)

Lead chromate is 64.1% lead by weight.

EXAMPLE RELEASE CALCULATION #2

Question	Response for Quantities in Finished Product
Where does the amount get reported on the Form R?	
How much should be reported?	
What was the basis for determining this amount (M,C,E,O)*?	

*Monitoring data, mass balance, emission factor, or other approaches and engineering estimates

EXAMPLE RELEASE CALCULATION #2

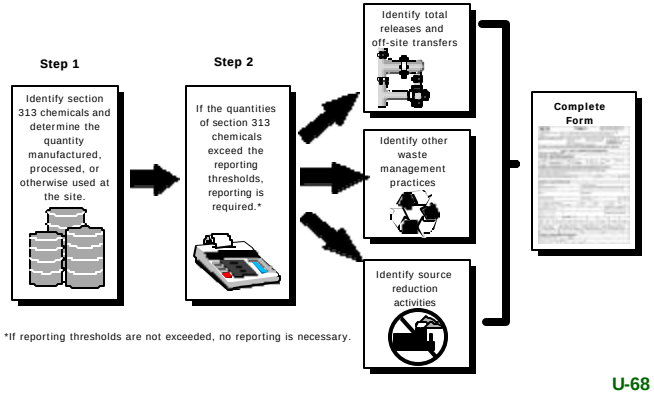
Question	Response for Quantities in Finished Product
Where does the amount get reported on the Form R?	NOWHERE!
How much should be reported?	NONE!
What was the basis for determining this amount (M,C,E,O)?	NOT APPLICABLE!

Those quantities used to make product count towards *thresholds* but do not count towards *releases*.

KEY POINTS

- Identify all release points
- For both lead and lead compounds, only report releases and waste management activities for *lead*
- If thresholds for both lead and lead compounds are exceeded, facilities may submit a single Form R (for lead compounds) that covers both
- Classify releases and waste management activities carefully on the Form R
  - Lead cannot be destroyed and should never be reported in Section 8 as being treated for destruction
  - Lead should not be reported in Section 8 for energy recovery
- Document calculations and assumptions

TRI REPORTING PROCESS—REVISITED



*If reporting thresholds are not exceeded, no reporting is necessary.